

REMARKS

This is in response to the Official Action currently outstanding with respect to the above-identified case.

Claims 1-22 were presented for examination in the present application as filed on 8 September 2003. Applicants do not propose any amendment, cancellation or additions to Claims 1-22 as originally filed in this RESPONSE. Accordingly, upon the entry of the foregoing Amendment, Claims 1-22 will constitute the claims under active prosecution in this application.

Since no change to the Claims as originally filed as part of this application is contemplated by the present RESPONSE, the Claims of this application as originally filed are not reproduced herein.

In the currently outstanding Official Action, the Examiner has made the following acknowledgements, comments and rejections:

1. The Examiner has provided Applicants with a Notice of References Cited (PTO-882);
2. The Examiner has provided Applicants with a copy of the Form PTO-1449 that accompanied the Information Disclosure Statement filed concurrently with this application, duly signed, dated and initialed by the Examiner to confirm his receipt and consideration of the references listed therein;.
3. The Examiner has acknowledged Applicants' claim for foreign priority under 35 USC 119(a)-(d), and that the U.S. Patent & Trademark Office has received the required certified copy of the priority document;
4. The Examiner has failed to comment upon the acceptability of the formal drawings filed with this application on 30 January 2004 – **An indication concerning the acceptability of the drawings currently on file in this application in response to this communication is respectfully requested.**

5. The Examiner has rejected claims 1-5, 7-13 and 15-22 under 35 U.S.C. §102(b) as being anticipated by the Hirai et al. reference (US Patent 6,148,168); and
6. The Examiner has objected to Claims 6 and 14 as being dependent upon rejected base claims, but indicated that those claims would be allowable if rewritten in independent form including all of the limitations of their respective base claims and any intervening claims.

Further comment in these Remarks regarding items 1-4 above is not deemed to be necessary in these Remarks.

With respect to items 5 and 6 above, Applicants respectfully **traverse the Examiner's rejection under 35 USC 102(b) and objection to Claims 6 and 14**. In support of this traversal, Applicants respectfully submit that the Examiner has misapprehended the Hirai et al reference upon which he has relied in rejecting Claims 1-5, 7-13 and 15-22. Further, Applicants respectfully submit that when the Hirai et al reference is correctly understood the fact that the Hirai et al reference does not anticipate any of the presently pending Claims of this application will become clear. Accordingly, a decision in response to this communication to the effect that Claims 1-22 of this application as originally filed are in condition for allowance is respectfully requested.

More particularly, in support of his rejection of Claims 1-5, 7-13 and 15-22, the Examiner has alleged that:

Hirai et al disclose an image adjusting method comprising forming images based on each of the color components (i.e., color component , Col. 11, line 50); transferring the formed images on each transfer medium to form an image quality determining image (i.e., reference pattern image formed at delay time $T-\Delta t$, Col. 11, line 57); *detecting the density of the formed image quality determining image on the basis of the detected density* (Col. 11, lines 64-67); forming an adjustment image (i.e., reference pattern image formed at delay time of $T+\Delta t$, Col. 11, line 58) by overlaying and transferring an image of other color component to be adjusted to a reference image of a reference color component out of the color components of the transfer medium; *detecting the density of the formed adjustment image and adjusting the image forming position of the other color component on the basis of the detected density* (Col. 11, lines 49-55), wherein the adjustment image are formed after forming the image quality image (Col. 11, lines 56-58)

Hirai et al further disclose the image quality determining image is formed by arranging a plurality of images of other color components to be adjusted at a first interval *individually with being overlaid on the image of the reference color component* (Col. 11, lines 49-51), *the image quality determining image includes a portion (i.e., multiple lines) formed only of the image of the reference color component* Col. 9, lines 29-35). Emphasis added

At the outset it is to be recognized that the Hirai et al reference is the United States counterpart of Japanese Patent Application Laid-Open No. 2000-81744 that is disclosed and discussed in the present specification as prior art (see present specification at page3-4). Accordingly, it will be understood that Hirai et al does not describe or suggest the features of the independent claims of the present invention, i.e., “forming an image quality determining image”; “detecting the density of the image quality determining image”; and “determining the image quality of the image quality determining image on the basis of the detected density”. The portions (Column 11, line 57 and column 11, lines 64-67) cited by the Examiner as descriptions that teach the last mentioned features do not support the Examiner’s position. Those portions of the Hirai et al reference instead actually teach the formation of an adjustment image, detection of the density of an adjustment image and adjustment of color registration. Thus, it will be seen that the Examiner’s argument is internally inconsistent in its assertion that the portion of the Hirai et al reference to which he refers shows *both* a determination of the density of the “image quality determining image” and a determination of the density of the so-called “adjustment image”. In the Hirai et al reference, the only density determination that is taken is that which is taken with respect to the overlapped pattern images and adjustment images relative to a preset value D0 (see Hirai et al at Column 11, lines 14-25).

Therefore, it will be understood that the Hirai et al reference discloses detecting the density of the superimposed pattern images of two colors formed at a predetermined distance to determine misregistration. However, Hirai et al fails to teach, disclose or suggest the feature of the present invention of forming an image quality determining image and determining the image quality of the image quality determining image before forming an image for adjusting color misregistration.

As will be discussed further below, the extent that Hirai et al may be said to disclose an image quality determining image, that image quality determining image comprises a solid image P0 and a color image line (indicated in Hirai et al at P1) formed on the solid image P0 at a predetermined distance. In the Hirai et al reference it is determined whether the density of those superimposed images is within a predetermined range without regard to any previous measurement of the density or quality of the pattern images. This is clearly not the same thing as the presently claimed invention.

In particular, in the currently outstanding Official Action, the Examiner suggests that in the Hirai et al reference images are formed based upon each of the color components, and that those images are transferred to form an image quality determining images (characterized by the Examiner as reference pattern images formed at delay time $T-\Delta t$). According to the Examiner's interpretation of the Hirai et al reference, the density of that image quality determining image is detected, the image quality of that image quality determining image is determined on the basis of its image density, and an adjustment image is formed by transferring and overlying an image of a color component onto a reference color component. Thereafter, according to the Examiner's interpretation, the density of the adjustment image is determined and the image forming position is adjusted, wherein the adjustment image is formed after the image quality determining image. Applicants cannot agree with this interpretation of the Hirai et al reference, particularly with respect to the underlined sections above. Accordingly, Applicants respectfully submit that the Examiner has misapprehended the content of the Hirai et al reference teaching/disclosure in the course of rejecting Claims 1-5, 7-13 and 15-22 of the present application.

In this regard, therefore, Applicants respectfully submit that the problem with the Examiner's analysis in the currently outstanding Official Action is that he has not correctly characterized the Hirai disclosure and teachings. Specifically, Applicants respectfully submit that the correct interpretation of the Hirai et al reference is that it discloses a series of patterns (designated as "P0") of images of a reference color are first formed (Column 11, lines 49-51). In this regard, it is to be understood that the parallel solid black lines shown in either Figure 3 or Figure 6 are representative of the images contained in these patterns of reference color images.

On the other hand, however, it also is to be understood that the solid black boxes shown in Figures 3 and 6 of the Hirai et al reference are simply representative of the measuring area H of the sensor 232. Hence, it also is to be clearly understood that those solid black boxes do not constitute a representation of an image formed on the transfer belt during the practice of the method of the Hirai et al reference (see, for example, Hirai, et al at Column 9, lines 61-67).

The Hirai et al reference teaches that after the reference pattern images have been formed, pattern images P1 of the color components to be adjusted relative to the reference color images P0 previously formed are formed at timings shifted relative to a reference timing T by +/- integer multiples of Δt . In this way, various relative overlaps of the various groups of color images P1 formed on the reference images P0 are achieved as is generally shown in the Hirai et al reference at Figure 7. Consequently, it will be understood that according to the Hirai et al reference, the pattern images P1 are laterally shifted relative to the reference image pattern P0 by varying the timing of their transfer from the transfer medium onto the same area of the transfer belt 216 as that on which the reference pattern images P0 are located.

Accordingly, Applicants respectfully submit that a careful review of the Hirai et al reference reveals that no image quality determination image per se is ever performed or separately evaluated in the Hirai et al. reference. Instead, it is the teaching, disclosure and suggestion of the Hirai et al reference that the optimal alignment of the various color components is achieved by virtue of the image sensor 232 searching for the case in which the density of the entireties of the images detected in the imaging sensing area H (i.e., the overlapped reference image pattern images P0 and adjustment images P1) are all the closest to a preset density value D0. Applicants respectfully submit that this clearly and definitely is not the same thing as determining whether the color images formed on reference images for alignment have at least a predetermine quality as measured by a density value determination made relative to a density value previously determined in association with a previously formed quality determination images.

In view of the foregoing, therefore, Applicants respectfully submit that the Examiner is incorrect in his characterization of the color component image referred to at Column 11, line 50 of the Hirai et al reference as being an “image quality determining image” as that term is defined and used in the present specification and claims. The image referred to at the point of the Hirai reference cited by the Examiner is rather simply a background image pattern upon which color component images are superimposed for later adjustment based upon the overall characteristics of the overlapped images. As mentioned above, the Hirai et al reference teaches, discloses and/or suggests **nothing concerning the determination of the density of that image (P0) by itself for any purpose**. Consequently, Applicants respectfully submit that the Examiner’s logic as stated in the currently outstanding Official Action fails in view of the Examiner’s apparent misapprehension of the basic premises upon which the operation of the Hirai et al reference is predicated. Hence, Applicants respectfully submit that the Hirai et al reference fails to disclose, either directly or inherently, all of the elements of the independent claims the present application as would be required to properly support an anticipation rejection under 35 USC 102(b).

Therefore, for the reasons stated in these Remarks, Applicants respectfully submit that the Examiner’s outstanding rejection under 35 USC 102(b) is in error and should be withdrawn. A decision so holding in response to this communication is respectfully requested.

Further, since the claims upon which Claims 6 and 13 as originally filed depend now have been shown to be allowable over the art cited by the Examiner, it is respectfully submitted that the Examiner’s outstanding objections to Claims 6 and 13 as being dependent upon a rejected base claims also should be withdrawn. A decision so holding in response to this communication also is respectfully requested.

In summary, Applicants respectfully submit that the Examiner has misapprehended the teachings, disclosures and suggestions contained in the Hirai et al reference, and further that once the Hirai et al reference is correctly understood, the fact that the Hirai et al reference does not anticipate the presently claimed invention becomes readily apparent. Also, since it has been demonstrated hereinabove that the claims upon which Claims 6 and 14 depend are not anticipated by the Hirai et al reference, Applicants respectfully submit that Claims 6 and 14 can no longer be said to be dependent upon base claims that are not in condition for allowance, and the outstanding objection to those claims should be withdrawn in response to this communication. Consequently, an indication of the allowance of Claims 1-22 in response to this communication is respectfully requested.

Finally, Applicants believe that additional fees are not required in connection with the consideration of this response to the currently outstanding Official Action. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. 04-1105, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication

Respectfully submitted,

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SIGNATURE OF PRACTITIONER

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